



CORPORATE PURCHASE SPECIFICATION

AA 55308

Rev. No. 02

PREFACE SHEET

RUBBER BASED ADHESIVE – HEAVY DUTY

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Equivalent Standards:

1. INDIAN : IS : 2561 – 1963(RA-2003)
TYPE : HEAVY DUTY

Acceptable Commercial Grades/Suppliers:


1. M/s. DUNLOP : S – 758 Adhesive..
2. M/s. P.C. Chandra, Calcutta : Dendrite PC65

User Plants & Replaced Plant Specifications/References:

1. BHOPAL : Supplier's Grade
2. EDN, BANGALORE :do.....
3. HYDERABAD :do.....

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Revisions : As per 40 th MOM of MRC-CPO			APPROVED : INTERPLANT MATERIAL RATIONALISATION COMMITTEE-MRC (CPO)		
Rev. No. 02	Amd.No.	Reaffirmed	Prepared	Issued	Dt. of 1st Issue
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	CORPORATE PURCHASE SPECIFICATION		AA 553 08		
			Rev. No. 02		
			PAGE 1 OF 4		
RUBBER BASED ADHESIVE – HEAVY DUTY					
<p>1.0 GENERAL: This specification deals with the quality of rubber based adhesive having a consistency suitable for brushing application.</p> <p>2.0 APPLICATION: Used for joint rubber to metal or rubber to rubber parts in switchgear, motors and other equipment.</p> <p>3.0 COMPLIANCE WITH NATIONAL STANDARDS: The material shall comply with the requirements of the following National Standards and also meet the requirements of this specification. IS: 2561 – 1963 (RA-2003) : Rubber Based Adhesives For The Automobile Industry Type: Heavy Duty</p> <p>4.0 CHEMICAL COMPOSITION: The adhesive shall be manufactured from oil resistant Chloroprene rubber, resins and appropriate solvents and shall be a homogeneous solution.</p> <p>5.0 TEST SAMPLES: As per Appendix D of IS : 2561.</p> <p>6.0 PREPARATION OF TEST SPECIMENS: Test specimens as described below shall be prepared for determining the adhesion strength of the adhesive supplied.</p> <p>6.1 Components Required:</p> <p>6.1.1 Rubber Sheets: Sheets of vulcanized rubber, 1.8 to 2.00 mm thick, 25 mm wide and 150 mm long having a hardness of 40 to 60 IRHD.</p> <p>6.1.2 Mild Steel Sheets: 1.5 to 2 mm thick, 25 mm wide and 100 to 150 mm long.</p>					
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**6.2 Surface Preparation of Components:**

The surfaces of the rubber and mild steel sheets to be coated with the adhesive shall be cleaned with medium grit emery or sand paper and then washed with carbon tetra-chloride or non-leaded petrol.

6.3 Coating:

For each assembly apply two coats of the adhesive on one side of each component over a length of 25 mm from one end of each component.

6.4 Open Assembly Time:

3 – 5 minutes.

6.5 Bonding:

Bonding is to be done with an overlap of 25 mm at room temperature under a load of 2 kg for 24 hours.

6.6 Conditioning of Test Specimens:

The bonded specimens shall be conditioned at a temperature of $27 \pm 2^{\circ}\text{C}$ and 65 ± 5 percent relative humidity for 24 hours before testing.

6.7 Number of Test Specimens:

Three test specimens shall be tested for each assembly and each assembly shall consist of at least one flexible component.

7.0 APPARATUS

A standard tensile testing machine shall be used. The grips shall be suitably designed to firmly grip the ends of the specimen between knurled, straight vertical surfaces. The rate of separation of the grips shall be 50 mm per minute.

8.0 TEST PROCEDURE:

Fix the free end of steel in the upper grip and the free end of rubber after folding in the lower grip. Start the machine and record the load required to separate the joint.

9.0 CALCULATION AND REPORT

Calculate the load required to cause separation in terms of kg/cm width. If the variation in any two of three results exceeds 20% of the test results, the results shall be discarded and a further set of three test specimens shall be tested. The mean of the three values obtained shall be reported as adhesion strength.

10.0 PROPERTIES:

When tested in accordance with the test methods indicated, the material shall show the following properties.



CORPORATE PURCHASE SPECIFICATION

AA 553 08

Rev. No. 02

PAGE 3 OF 4

10.1 Colour: Brown

10.2 Viscosity at 27°C:

1700 – 2000 cps by Brookefield or any other Viscometer.

10.3 Non-Volatile Matter content at 140°C for 4 hours: 20 ± 2 percent.

10.4 Drying time (At Room Temperature): 30 minutes after application by brush.

10.5 Flash Point (IS : 101 : Part 1/Sec. 6) : Not below 4°C.

10.6 Adhesion Strength (Appendix A of IS : 2561) : 3.2 kg/cm width, minimum.

10.7 Adhesion Strength After Heat Ageing At 70°C For 120 Hours:

Shall not decrease by more than 25% of the original strength.

10.8 Adhesion Strength After Humidity Cycle (95% Humidity, 55 ± 2°C, 16 hours on, 8 hours off Cycle) :

Decrease in adhesion strength shall not exceed 20% of original strength after 2 cycles.

10.9 Adhesion Strength After Immersion In Transformer Oil At 90°C For 72 Hours:

Decrease in adhesion strength shall not exceed 25% of original strength.

11.0 TEST CERTIFICATES:

Unless otherwise stated, three copies of test certificates shall be supplied, giving the following informations:

AA 55308 : Rubber Based Adhesive – Heavy Duty.

BHEL Order No.

Supplier's Name & Trade Mark, if any.

Batch No.

Date of Manufacture and Expiry.

Test Results of Clause 10.0.

12.0 KEEPING PROPERTY:

When stored in a covered dry place in the original sealed container under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of 12 months after the date of manufacture, which shall be subsequent to the date of placing the order.

**13.0 PACKING AND MARKING**

The material shall be packed in air tight containers of suitable size.
Each container shall be marked with the following information:

AA 553 08: Rubber based adhesive - Heavy duty
BHEL Order No.
Manufacturers/ Supplier's name:
Trade name / mark , if any:
Batch/Lot No.:
Quantity supplied:
Date of manufacture and expiry:

The container shall also be marked with BIS certification mark.

14.0 ENVIRONMENTAL REQUIREMENTS:

The supplier shall furnish Material Safety Data Sheet (**MSDS**) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal along with each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable

15.0 REFERRED STANDARDS (Latest Publications Including Amendments):

1) IS:101, pt 1

2) IS:2561